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| 09/733,629      | 12/08/2000  | David A. Brown       | 2037.2014-000       | 2407             |

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| EXAMINER |
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HOM, SHICK C

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| ART UNIT | PAPER NUMBER |
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2616

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01/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/733,629

Applicant(s)

BROWN, DAVID A.

Examiner

Shick C. Hom

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/1/07 has been entered.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 112***

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 5, 9, and 13, which recite the second set of routes being derived from the first set of routes is not clear because page 5 lines 11-13 of the specification recite that the number of routes in the first set of routes may be less than the number of routes in the second set of routes or the number of routes in the first set of routes is greater than the number of routes in the second set of routes and the specification does not recite any set of routes being derived one from the other and therefore it is not clear how the second set of routes is derived from the first set of routes and whether it is reciting the second set of routes includes a copy of the first set of routes and at least one additional route as in claims 18-20.

Claims 2-4, 6-8, 10-12 and 14-20 are rejected under 35 U.S.C. 112, second paragraph because they depend from rejected claims 1, 5, 9, and 13, respectively.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-5, 7-9, and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nickel (5,202,986) in view of Simonyi (6,189,143) in view of Tzeng (6,067,574).

Regarding claims 1, 5, 9, and 13:

Nickel discloses a method for updating a lookup table comprising the steps of:

providing access to a first subtree within a tree, the first subtree being accessed through a first pointer to a first subtree root node of the first subtree;

providing a second subtree disconnected from the tree, the second subtree being accessed through a second pointer to a second subtree root node of the second subtree and being initially inaccessible via the tree (the abstract recite the method of locating data records stored in a tree structure whereby each node of the tree includes pointer to the subtree and whereby nodes can be inserted or deleted from the tree clearly anticipate the first and second pointers corresponding to the first and second subtrees); and

switching access the second subtree by replacing the first pointer to the first subtree root node with the second pointer

to the second subtree root node to update the tree by replacing the first subtree with the second subtree (col. 15 lines 38-52 recite replacing deleted nodes using pointer clearly anticipate switching access by replacing first pointer with the second pointer).

Nickel discloses all the subject matter of the claimed invention with the exception of the set of routes being stored in the nodes of the subtrees as in claims 1, 5, 9, 13; wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes as in claims 3-4, 7-8, 11-12; and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as in claims 14-17.

Tzeng the same or similar fields of endeavor teach that it is known to provide set of routes being stored in the nodes of the subtrees (see col. 2 lines 18-45, col. 2 line 64 to col. 3 line 17, and col. 3 line 63 to col. 4 line 23 which recite the

IP routing lookup table having pointer to the root node of a tree, insertion and deletion of entries in the lookup table, and whereby the subtree begins at the root node of the tree, respectively as in claims 1, 5, 9, 13); wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes (see Fig. 3 where the number of routes from node B is greater than the number of routes from node C as in claims 3-4, 7-8, 11-12); and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree (see the abstract and col. 3 line 53 to col. 4 line 23 which recite the use of the destination address includes searching for the prefix having the longest match when compared to the destination address; and col. 1 lines 8-10 which recite the stored IP routing information as in claims 14-17).

Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to

provide the set of routes being stored in the nodes of the subtrees; wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes; and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as taught by Tzeng in the communications apparatus and method of Nickel.

The set of routes being stored in the nodes of the subtrees; wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes; and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom



level of a subtree can be implemented by storing set of routes in the nodes of the subtree and having number of routes in the first set of routes being less than or greater than the number of routes in the second set of routes which include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree of Tzeng in the subtrees and of Nickel.

The motivation for storing set of routes in the nodes of the subtrees and having number of routes in the first set of routes being less than or greater than the number of routes in the second set of routes which include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as taught by Tzeng in the communication method and apparatus of Nickel being that it

provides an application of routing for the system of storing data in tree structure of Nickel and provided the desirable added feature of connection to the internet via IP address in the system of Nickel.

6. Claim 2, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nickel (5,202,986) and Tzeng (6,067,574) in view of Nakatsu et al. (5,787,151).

For claims 2, 6, and 10, Nickel and Tzeng discloses the method and apparatus described in paragraph 5 of this office action. Nickel and Tzeng discloses all the subject matter of the claimed invention with the exception of the step and means of deallocating the memory used by the first set of routes after switching access.

Nakatsu et al. from the same or similar fields of endeavor teach that it is known to provide the step and means of deallocating the memory used by the first set of routes after switching access (see col. 12 lines 13-29 which recite upon call termination, the manager deallocating the memory buffers to be available for use by other call flows). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the step and means of

deallocating the memory used by the first set of routes after switching access as taught by Nakatsu et al. in the method and apparatus of Nickel and Tzeng. The step and means of deallocating the memory used by the first set of routes after switching access can be implemented by connecting the memory manager of Nakatsu et al. to the memory of Nickel and Tzeng. The motivation for using the memory manager as taught by Nakatsu et al. in the method and apparatus of Nickel and Tzeng being that it provides more efficiency for the system since the system can function using less memory by deallocating the memory no longer needed.

#### ***Allowable Subject Matter***

7. Claims 18-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Simonyi discloses a method and system for reducing an intentional program tree represented by high-level computational constructs.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick C. Hom whose telephone number is 571-272-3173. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pham Chi can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SH SH

  
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SUPERVISORY PATENT EXAMINER

1/9/08